the astrogram

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National Aeronautics and Space Administration • Ames Research Center, Moffett Field, California

New Air Foil Shape Tested at Ames

The first flight of a new airfoil shape that could substantially lower the operating cost of future jet transports has been tentatively scheduled by NASA for early this month.

The exact flight date depends on the completion of ground tests and favorable weather conditions.

Called the NASA supercritical wing, the new airfoil shape will be flight tested at NASA's Flight Research Center aboard an extensively modified jet fighter. Thomas C. McMurtry, a civilian research pilot for FRC will pilot the first flight.

Cruise speeds of present day jet transports usually reaches Mach 0.8 or about 530 m.p.h. at a cruising altitude of 35,000 feet. At this range the air flowing over the curved upper surface of the wing reaches supersonic speeds, resulting in local shock waves on the wing that cause a sharp rise in aerodynamic drag and a significant decrease in efficiency.

The supercritical wing has a flattened top surface, alsmost directly opposite from conventional airfoil shapes. This delays the speed of the air flowing over the upper wing surface from reaching supersonic speeds until the airplane itself is flying at a higher speed. It also moves the shock wave near the back of the wing and increases the total wing efficiency.

To compensate for some loss of lift that results from flattening the top of the wing, the rear portion of the lower surface has been shaped in the form of a concave curve.

The supercritical wing was developed at NASA's Langley Research Center in a wind tunnel program under the direction of Dr. Richard T. Whitcomb. These tests indicated that the new airfoil shape could allow highly efficient flight near the speed of sound, approximately 660 m.p.h. at cruising altitudes.

If the performance measured in the wind tunnel can be achieved in flight, it should be possible for future aircraft to cruise at the higher speeds with no increase in fuel consumption. This advantage could be converted into increased

Continued on page 3

Woman of the Year

MRS. BETTY J. BALDWIN

Mrs. Betty J. Baldwin, a computer programmer in the Structural Dynamics Branch at Ames, was named "Woman of the Year" last week by the Palo Alto Charter Chapter of the American Business Women's Association (ABWA).

Mrs. Baldwin was selected for this honor because of her progress as a civil service employee at Ames and for her many other interests in educational and character building programs.

Now a 20-year career employee, Mrs. Baldwin came to Ames in 1951 as a mathematics aide. She advanced to mathematics analyst supervisor, and then to her present position.

As a charter member of the Palo Alto Chapter of the ABWA Mrs. Baldwin has held elective offices from corresponding secretary to president and has been an active member of many committees. As Woman of the Year Mrs. Baldwin is entered in the competition for the national title "American Business Woman of the Year." Announcement of the winner will be made at the National Convention to be held in Anaheim October 22-24.

The ABWA is primarily educational in its endeavors and encourages women to seek additional training which will qualify them for advancement and keep them up-to-date on business procedures. Over $280,000 in scholarships was awarded by chapters throughout the country during the past year. Currently the Palo Alto Charter Chapter is spon-

Continued on page 2

Amphibious Hovercraft at Ames

For the next few weeks, Ames will have a visitor from the Coast Guard, variously called; Hovercraft, Air Cushion Vehicle (ACV) and Surface Effect Vehicle (SEV). By request of the Navy, the amphibious craft is at the Center for measurement of it's mass-moments-of-inertia.

Charles T. Jackson, Jr., Flight and Systems Research is coordinating tests which will indicate how the weight of the craft is distributed. The data obtained here will be used for support in further tests scheduled this year for the North Slopes of Alaska.

BAY AREA

The craft and it's two sister ships have been operated in the Bay Area recently by their owner, the U.S. Coast Guard, for search and rescue purposes. True amphibians, they move with equal ease over water, land, swamp and ice, and are not limited by weather conditions.

Previously, the crafts were successfully employed for several years in Viet Nam, where they patrolled off the coast and in the Mekong River Delta.

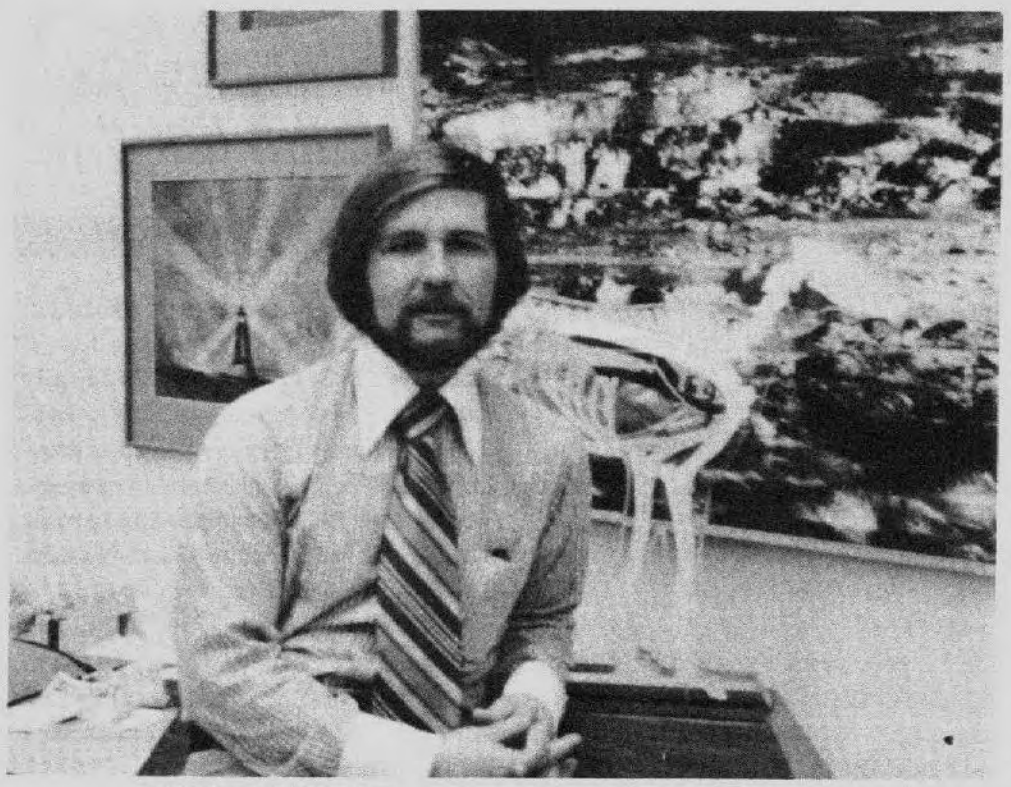
ARTIC CONDITIONS

In Alaska, the effects of arctic conditions on operations, maintenance and personnel will be tested as well as the ecological effects of the Hovercraft on Alaska. The tests will also provide engineering data which will be used in an advanced development program to define a large, high-speed craft for a year-round Arctic operation.

INSTRUMENTED

The craft will be instrumented by Applied Physics Lab (APL) of John Hopkins University to obtain data from the Alaskan Tests for study and design purposes. The Advanced Research Projects Office of the Department of Defense is overseeing the entire project.

THE AMPHIBIOUS HOVERCRAFT . . . . . is pictured above as it moves from water to land with ease. Also called the Air Cushion Vehicle (CV) and Surface Effect Vehcile (SEV), the craft is at Ames for the next few weeks, under going measurements of its mass-moments-of-inertia. Coordinating the tests here at the Center is Charles T. Jackson, Jr., Flight and Systems Research.



PAUL BENNETT . . . Biomedical Illustrator, Graphics and Exhibits Branch, is pictured above with one of the many demonstration models he has created during his three years at Ames Mr. Bennett is responsible for the production of the graphics and visuals used by the Life Sciences Program. His work has been duplicated by other Centers, and he has recently been asked to present a paper at the Western Regional Bio-Communications Seminar in Pacific Grove.

Paul Bennett, Biomedical Illustrator

Paul Bennett, Biomedical Illustrator of the Graphics and Exhibits Branch, has been invited to present a paper; "The Multiple Image Approach to Information Transfer," at the Western Regional Bio-Communications Seminar in Pacific Grove on March 13.

The paper is related to work done by Mr. Bennett on the multiple image presentation, "Step by Step," which was prepared for Ames' Apollo XI Lunar Rock Show in December of 1969. "Step by Step" was a visual representation of the efforts of the many people who have, over the years, contributed to the space program, thus making the success of Apollo XI possible.

As Biomedical illustrator it is Mr. Bennett's responsibility to produce the graphics and visuals necessary to effectively amplify the results of the scientist's work in Ames' Life Sciences Program. As such, during the three years Mr. Bennett has been at Ames, his work has ranged from illustrations for publication, through producing slides to creating demonstration models and designing exhibits.

One of the exhibits that Mr. Bennett contributed visuals to was the popular Ames "Biotechnology/ ECG Demonstrator." The exhibit's theme dealt with the work of several Ames researchers; Dr. Harold Standler, Biomedical Research, Mr. Thomas Fryer, Electronics Research, and Mr. Gordon Deboo, Electronics Research, in microminiature biotelemetry instrumentation. The Exhibit has since been duplicated by the Alabama Space and Rocket Center and Marshall's Visitor Information Center.

NASA Public Affairs Head Resigns

Julian Scheer, who for more than eight years directed NASA public affairs activities, resigned last week.

Scheer joined NASA as a consultant in November 1962 and has served as Assistant Administrator for Public Affairs since November 1963. In this capacity he was responsible for all of the information, educational and special events activities associated with NASA's program.

His service began with the Project Mercury manned flight program and the unmanned Ranger and Mariner missions to the Moon and planets, and has continued through the Apollo manned lunar landing program.

In making this announcement, Dr. George M. Low, NASA Acting Administrator, said: "NASA's public affairs program, in the past nine years, has been a good one. Under Julian Scheer's leadership, the story of our achievements in space has been told well, and the public was fully and openly informed."

He was awarded NASA's Exceptional Service Medal in 1968 and NASA's highest award the Distinguished Service Medal, in 1969.

A successor for Scheer has not been named and he announced no plans.

A WELCOME TO AMES . . . Students from the Fremont Union High School District, participating in a work-study program at Ames, were given an enthusiastic welcome recently. Max Strauss, Research Equipment Engineering (left) greets new employees Bruce Brogden (right), Los Altos High School and Wilma De Vos, (right, center) from Fremont High School, as Carl Sodergren, Counselor for the Fremont Union High School District Training Program looks on. The program enables high school students to include on-the-job training as part of their curriculum. Approximately fifty students from six schools are working at Ames through the program. They receive credits through their school for the work.

Valley Science Fair March 27

Opening of registration for the annual Santa Clara Valley Science Fair was announced today by President Everett H. Layne of General Electric. Final registration deadline for all science projects, technical papers and scientific graphic arts entries is set for March 1.

"We urge all students in grades six through 12 to enter the competition," Layne said, "and all science teachers in the valley have received registration forms." Additional forms and informaton may be obtained from Fair Director Richard Castronovo of Cupertino School District, P.O. Box 243, San Jose 95103.

The 1971 fair will be held March 27 at Santa Clara County Fairgrounds, and is open to the public without charge. Hundreds of scientific projects will be on display, with judging by valley scientists, educators, engineers, artists and other professionals. Last year's fair drew nearly 9,000 visitors.

The Valley Science Fair is supported by contributions from business and industry to encourage and provide recognition for scientific and engineering creativity.

For the first time this year, two work-research scholarships will be provided by NASA in the biological and physical science divisions. Winners, to be chosen by Dr. S.N. Stein, Chief Medical Officer, will earn $600 each for their research work at Ames. They will continue their own projects in association with an Ames scientist or join existing Ames research teams. Payment will be made through the students' school districts.

WOMAN OF THE YEAR

Continued from page 1

soring three scholarships for women.

A native of Fresno, California, Mrs. Baldwin was graduated from U.C. Berkeley with an A.B. degree in journalism and took mathematics courses at San Jose City College and Foothill College. As an undergraduate she met and married Dr. Barrett S. Baldwin, Jr., Computational Fluid Dynamics. They have two daughters and three grandchildren.

The Astrogram Room 134 Admin. Mgt. Building Phone 2385

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Editor . . . . . Dot Evans
Reporters . . . . . NASA Employees

Deadline for contributions:
Thursday between publication dates

RTG UNITS FOR PIONEER . . . The first Radioisotope Thermoelectric Generators (RTG's) for Pioneer F and G were delivered to Ames recently. On hand to review the units were (l to r) Charles F. Hall, Pioneer Project Manager; Dr. Hans Mark, Ames Director; Charles Baxter, AEC representative on the Pioneer Program; Arthur C. Wilbur, Ernest J. Iufer and Paul W. Droll, all of the Vehicle Systems Design Branch.

NEBA Celebrates 18th Year with Drive

The NASA Employees Benefit Association is celebrating its 18th anniversary throughout the month of March with a drive for membership. Any full-time, permanent NASA employee is eligible. Over 16,000 staff members are currently members of the NASA Group Life Insurance Plan. To enroll, an enrollment card and appropriate quarterly payment must be sent to the NEBA Office. Deadline for enrollment is April 1.

Participants in the plan may also obtain insurance coverage on their spouses and children if they so desire. Not only is it rather unusual to be able to obtain dependent coverage under a group plan, but also the rates are very low. The quarterly premium payment is the same amount, regardless of the number of children covered, or the age of the spouse. In addition, this policy has a guaranteed insurability option, that assures the availability of $5,000 of cash vaulue life insurance to each dependent child when he reaches age 19, regardless of his health, occupation, or military status at that time. Even in the case where there are no children and only the spouse is covered, the cost is about $1 per thousand per quarter, and of course, is much less if children are also covered.

Changes in the class of insurance in accordance with the below Schedule of Insurance will be effective on the first day of the calendar quarter following the date of the change in the employee's base annual pay.

This insurance is available to all NASA employees occupying full-time positions and serving under other than a temporary limited appointment if application is made within 90 days of the date of employment. However, for those employees who did not obtain this insurance during their first 90 days of employment, it is still relatively easy for most to get the coverage now. They must complete a health questionnaire, showing evidence of insurability satisfactory to the Home Life Insurance Company. In doubtful cases, the company may request further medical information from the applicant's personal physician or, in rare cases, that he obtain a medical examination.

The amount of life insurance you may obtain is based on your annual earnings. The full amount is payable on death from any cause. If death is the result of an accident, your beneficiary would receive double indemnity - or twice the amount of your insurance coverage. Check the schedule immediately below for the figures that apply to you.

Employee Coverage Only

Class	Base Annual Earnings	Life Insurance Face Amount	With Accidental Death Benefit	Quarterly Payment*
1	Less than $7,000	$8,000	$16,000	$10.40
2	$7,000 but less than $8,000	$10,000	$20,000	$13.00
3	$8,000 but less than $10,000	$12,000	$24,000	$15.60
4	$10,000 but less than $12,000	$14,000	$28,000	$18.20
5	$12,000 but less than $14,000	$16,000	$32,000	$20.80
6	$14,000 but less than $16,000	$18,000	$36,000	$23.40
7	$16,000 but less than $18,000	$20,000	$40,000	$26.00
8	$18,000 but less than $20,000	$23,000	$46,000	$29.90
9	$20,000 but less than $22,000	$25,000	$50,000	$32.50
10	$22,000 but less than $25,000	$27,000	$54,000	$35.10
11	$25,000 but less than $30,000	$30,000	$60,000	$39.00
12	$30,000 and over	$35,000	$70,000	$45.50

*Quarterly payments may vary from year to year based on dividends earned.
**14 days to 6 months–$100 of coverage provided; $1,000 from 6 months to 19 years.

RTG's Delivered to Pioneer F and G

The first pair of Radioisotopes Thermoelectric Generators (RTG's) for use with Pioneer F and G were delivered to Ames early last month.

Design features incorporated in the RTG units which minimize the magnetic fields generated by the RTG's were suggested by Ernest J. Lufer of the Vehicle Systems Design Branch. It is anticipated that as a result of these design features the magnetic fields generated by the RTG's will be well within the requirements specified for the Pioneer F and G Program.

Tests performed at Ames are part of the overall acceptance test program for the RTG units. Each Pioneer spacecraft will have four such units. The first two were delivered last month and are to be integrated with the prototype spacecraft during the first part of March. It is anticipated that eventually nine or more RTG units will be delivered to Ames for magnetic testing and then to TRW Systems for integration with the Pioneer spacecraft.

Air Foil Shape

Continued from page 1

range and/or, by carrying less fuel greater payload resulting in lower operating costs per mile.

The prime purpose of the flight test program is to verify the wind tunnel predictions and to explore the operational potential of the supercritical wing in flight.

Miniature Mass Spectrometer

A device orginally miniaturized to detect harmful gases in manned spacecraft may now be used to measure beneficial gases underwater.

A miniature mass spectrometer has been loaned by NASA's Flight Research Center to the University of Miami's School of Marine and Atmospheric Science, Miami, Florida. It is intended for use on the under water research vehicle Hydro-Lab which is scheduled for operation later this spring.

The small system was flown by NASA in a high performance jet aircraft to monitor and analyze samples of gas in the cockpit area. It was the forerunner of a system that could be used on future spacecraft to detect the build up of harmful gases or the absence of necessary life support gases over an extended period of time.

In the undersea tests, the mass spectrometer will be used to study photosynthetic processes of marine organisms. Photosynthesis is the process whereby plants use the energy available in the form of light to convert carbon dioxide to carbohydrates. A special high vacuum/high pressure probe will be used to monitor the production and consumption of respiratory gases from marine algae and other marine organisms under varying conditions of light, both natural and artificial.

Because the mass spectrometer system enables simultaneous monitoring of oxygen production and consumption, it has unique advantages for studying oceanic primary production and the contributions made by the Seas to global food supply.

In previous studies of photosynthesis at sea, a much larger spectrometer was used on board a surface research vessel. This necessitated bringing the biological samples to the surface which exposed them to large changes in temperature, pressure and light.

The miniature instrument will allow the scientists to study the marine organisms in their in their natural environment.

The miniatrue spectrometer was made available to the school under NASA's Technology Utilization program that is responsible for the dessemination of new aeronautical/aerospace technology for other applications.

Ames Airings

SID COPELAND, Machine Branch, just got back from a trip with the Knight Raiders Drum and Bugle Corps. The Corps performed at Disneyland's Parade of Presidents and at Linwood California, taking first in the Color Guard Contest and second the next day in the Drum and Bugle Contest.

According to Sid, the Corps is just great. The kids, age 12 to 21 have performed all over the state placing first in most events. If you have a child that plays a horn of drum, see Sid. There are a few openings left.

The Corps will be performing at Blackford High School, the evening of March 6.

EVELYN HARPER and BONNIE ROSZELL (both in the Procurement Division) hosted a baby shower and dinner for Joan Jaynes (also Procurement Division) at Evelyn's home on Feb. 19. All the girls in the division and several former employees enjoyed an unusually delightful evening.

YEAR OF THE BOAR

Ninety gourmets from Ames and Lockheed gathered at the Golden Pavilion Restaurant on Feb. 20 to welcome in the lunar year 4669, Year of the Boar. A total of 8 delicious dishes were served to the group. Ames coordinator for the dinner, Guy K. Wong of the RFE Branch is planning to make it an annual affair. Watch the Astrogram for announcement of other Chinese Gourmet dinners.

I would appreciate hearing of any interesting trips, incidents or newsworthy items. Send the information to Jeanne Richardson, N 241-4.

Are You Getting Your Point Across ?

If you have doubts, Jetstream Toastmasters Club may be able to help you. The purpose of the club is to help improve your speaking ability. Meetings are held on Wednesdays from 11:45 a.m. to 12:45 p.m. at the Kozy Grotto in Mountain View. For more information contact Ray Morris, ext. 2140.

"Thank You" Note

Patrick Lonzo would like to thank all of the NASA employees who helped him on his Eagle Scout project and invite them to his Eagle Court of Honor to be held at the Santa Clara Methodist Church at 7:30 p.m. on March 17. Pat's Eagle Scout Project was cleaning out the flood control waterways in the Santa Clara, San Jose area.

BOWLING

. . . by Dennis Riddle

We have a first place tie in Division I between the Comets and the Rikkety Wrecks. The Alley Katz have a clean lead in Division II. Remember: nine more weeks to go, anthing can happen.

Francis Genovia was finding the strike pocket with a very nice 217, 211/606! Tony Silva and George Rathert were right in there also with 215/583 and 213/574 respectively. The ladies were represented by Jan Konrath, 509 and Ina Rathert, 503.

It has been a great season! The scores and the spirits are high and everyone seems to be having a wonderful time. Keep your eye on your spot and happy bowling!

BASKETBALL

. . . by Phil Wilcox

The all Ames League finished their regular season with CSC in first place with Beer Barrels a close second. The results of the last games were; CSC - 2, ARO 0, it was a forfeit. Fighting Pumas 39, Beer Barrels 29, Jets 39, MAD 37.

Final Standings for the Season;

TEAM	WON	LOST
CSC	9	1
Beer Barrels	7	3
Fighting Pumas	6	4
Jets	4	6
ARO	2	8
MADMEN	2	8

Kite Fliers

Anyone interested in participating in an Ames Controlline Kite Club please contact Larry Leifer, ext. 2913. Information, instruction, and demonstrations available for this high adventure, high competition sport.

CSC TAKES FIRST PLACE . . . . in the Basketball League. Pictured above with their trophies are champion team members back row, (l to r) Arthur D. Jones, Ronald Wieland, Robert Deisher; front row, Lester Tovani, Edward Black and Michael Izrailor, all of the Simulator Computer Systems Branch.

Boy Scout Passports

Ames employees and members of their families who are Boy Scouts Scouters, or officials of Boy Scouts of America who are properly certified as representatives to the XIII World Jamboree of Boy Scouts in Japan July-August 1971, may have their passport application executed without charge by J. Violet Norcio, passport agent for Ames Research Center. Any inquiries may be directed to Mrs. Norcio, ext. 2307.

JOGGERNEWS

. . . by Jim Woodruff

John Arvesen, Jim Woodruff, Donn Kirk, and Roger Hedlund placed 104, 138, 143 and 153, respectively, in a field of about 300 in the eight mile Searsville Race Feb. 20. The race was mostly on fairly flat roads except for a long uphill near the end, which tested everyone's determination to keep on running.

Over a hundred application blanks and information sheets for the ten mile De Anza Ridge Run, which the Joggernauts will sponsor April 18, were accepted by the runners after the race. We have also been answering requests by mail, from individuals and clubs, for entry blanks and information. Anyone interested in running ten miles of roads and trails, or in helping to make the affair a success, call Jim Woodruff, 2066. Don't hesitate to give it a try. Participants of all abilities, men or women, are welcome. If you have been jogging a few months, and have checked with your physician, this would be fun.

WANT ADS

The Astrogram's ad section is provided as a personal, non-commercial service to Ames employees. Advertiser must be identified by name, extension and organization. The name may be left out of the ad but is needed for records. Ads must be submitted in writing to The Astrogram, N-241-4, by Thursday, a week before publication. The advertiser's home telephone number must be provided as a point of contact except in carpool notices.

AUTOMOBILES

For Sale- 1968 Pontiac Catalina 2-dr. HT, AT, PS, PB, Air, premium tires beige exterior, gold interior, superb condition, $2175. Call 326-0204.

Wanted-9-passenger station wagon, 68 or 69, Ford of Chev., low mileage. Phone 961-3348.

For Sale-1969 T-Bird Sedan, PB,PS, vinyl top, new tires, 18,000, very good condition. Take over payments on a $2,600 balance. Call 248-0798.

For Sale-1963 Honda 250, Custom parts, clean, $250, call Warren Jenkins at 255-3304.

For Sale-1968 Valiant, 6-cy., 145 HP, stick shift, very economical, radio and heater, excellent condition. $1190. Call 245-6924.

HOUSING

For Lease-2-bedroom house, has carpets, nice yard, convenient to freeways and shopping, clean. $190/mo., 253-4475.

Room for rent-Nicely furnished, limited kitchen privileges, non-smoker, $90 per month. Los Altos, 961-3167.

For Rent-Winterized cottage near Rte. 89 and N. Tahoe ski areas. Sleeps 6 - $90/wk or $40/wknd. 328-4642.

For Sale-Condomenium, 4-bdrm., 2 1/2 bath, Eichler townhouse, pool, playareas. Best Santa Clara loc., cul de sac, adjacent to elem. school, park. $29,500. Will consider trade on larger house. 248-4690.

MISCELLANEOUS

For Sale-King size bed, box springs and matress and frame. Excint. condition. $80, call 295-4938.

For Sale-Stereo Phonograph w/AM-FM Radio, Early American Cabinet, needs minor repair. Also portable stereo phono. call 734-2804, after 5 p.m.

For Sale-Heathkit AA-100 stereo amplifier, 60 watts music pwr. (30 w/ch. Heathkit AJ-41 am/fm, stereo tuner voice of music (VM) #1225GE stereo record changer, 16,33,45,78 speeds, all in exc. cond. $200, call 243-9970.

For Sale-Charter membership in private lake club near Grass Valley. $400, 493-1638.

For Sale-14ft. ski boat, trailer, 35 hp., Johnson, elec. start, 2 tanks, spare wheel, cover - $470, call 266-2872.

For Sale-5 ea 6:00-13 Blackwall tires for Pinto, etc., brand new, $50. S. Rositano, 259-4618.

For Sale-18" color T.V., Packard-Bell console needs tuner work, $75, complete trundle bed set, $20, Call 263-1619.

For Sale- Bunk Beds, maple, extra nice, $50, also two aluminum beds for pick-up truck, $15. Call Don Goodsell, 968-1200.

For Sale-Webcor console radio-phonograph, AM/FM stereo phono, stereo reel-reel tape deck, best offer, Wayne Hathaway, 968-3635.

For Sale-Portable automatic dishwasher, gen. electric excellent cond., price, only $60, phone 253-4357.

For Sale-Dyna stereo tuner, FM 3, $75 after 6, call 948-4740.

For Sale-Skis, Kneissl White Star, 210, marker bindings, asking $110, call 967-7343 after 5.

For Sale-Two-speed Coulumbia tape recorder, not hi-fi, good condition. $25, call 969-9485, after 5.

For Sale-Girls Bike 26", $15. Dog house, med. large dog, $9. Brown, Lees wool rug, apprx. 7x8 w/ 2 3'x4' scater rugs, $22. Two-each, 4'x8' layout, 5 complete trains, tracks, and accessories, make offer. Arther Gobets 739-2787.

For Sale-Electric Range, 30" wide, $50; 9x12ft. braided oval rug, $15. 246-4218.

VACANCY NOTICES

Merit Promotion

Physical Science Technician, GS-1311-8, Chemical Research office March 10, 1971.

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NEW AIR FOIL SHAPE

NASA Wing Flown

The first flight of a new airfoil shape that might significantly reduce the cost of future air travel was sucessfully flown last week at NASA's Flight Research Center.

The NASA supercritical wing,as it is called was flown on an extensively modified F-8 jet fighter by Thomas C. McMurtry, a civilian research-pilot engineer for NASA's Flight Research Center.

Last week's flight was an operational checkout of the aircraft and its systems. Maximum flight performance was restricted to a top speed of approximately 350 m.p.h. and peak altitude of 10,000 feet.

The NASA supercritical wing was developed in wind tunnels at Langley under the direction of Dr. Richard T. Whitcomb and constucted for NASA by North American Rockwell. The Vaught Aeronautics Corporation F-8 was loaned to NASA by the U.S. Navy.

Ames Signs SBA Minority Contract

An $84,000 contract with the Williams and Lutcher Special Services Co. of Menlo Park, and the Small Business Administration, acting as a contracting representative for Ames was signed this week to provide a central emergency duty office for Ames.

Working under provisions of Section 8(a) of the Small Business Act of 1953, Ames is contracting with the SBA which in turn is empowered to subcontract with small minority enterprises such as Williams and Lutcher. The program is specifically designed to aid and encourage potential minority suppliers who are seeking new business with government agencies.

The contract calls for operating an Emergency Central Alarm Control Room Duty Office which will coordinate on-site requests for services such as ambulance calls, fire, repair needs, and a variety of other emergency needs. It will operate 24 hours a day, 7 days a week, and will be staffed primarily by minority persons now unemployed.

Ames is actively seeking the participation of small business enterprise in its procurement activity.

Dryden Fellowship to W. H. Deckert

Wallace H. Deckert, research engineer in the Advanced Aircraft Programs Office at Ames received the National Space Club's Hugh L. Dryden Memorial Fellowship last week at the annual Goddard Memorial Dinner in Washington D.C.

Mr. Deckert will use the $2000 award to attend Massachusetts Institute of Technology during the 1971-72 school year. He will take management and technical courses related to his work in vertical and short take-off and landing aircraft as employed in short-haul transportation systems.

The award is named for Dr. Dryden, formerly Associate Administrator of NASA. It was established in 1966 to provide the opportunity for one NASA employee annually to undertake a year of graduate study in science, astronautics, or administration.

The National Space Club is an organization of leaders in the space field.

Mr. Deckert, who is presently program manager for the V/STOL lift-fan research transport program at Ames, was selected for his

WALLACE H. DECKERT

contributions to aeronautical research at the Center. He received his B.S. degree from the University of New Mexico in 1956 and an M.S. in aeronautical engineering from the University of Southern California in 1958.

Following his graduation, he worked for Lockheed Aircraft Corporation in Burbank for two years. He came to Ames in 1961 after two years of active duty with the U.S. Air Force at Edwards Air Force Base, where he was flight test project engineer for V/STOL test-bed aircraft.

H. Ernest Williams, partner in Williams and Lutcher Special Services Co., Menlo Park, (seated) signs a contract to provide emergency warning services at Ames. The contract is a result of a Small Business Administration program to aid small minority businesses. Also in the picture are (standing from left) Alvin S. Hertzog, Chief, Procurement Division; James Lutcher, partner, Williams and Lutcher; Dr. Hans Mark, Director; and Clifford D. Ryan, Chief, Procurement and Management Assistance Division, Small Business Administration, Region 9. Mr. Williams is seated at the alarm console in the Ames Emergency Central Alarm Control Room Duty Office which will be operated by the firm under the new contract, first of its kind awarded by Ames this year.

Ames to Host EEO Conference

Ames will host an "Equal Employment Opportunity" Conference next week, March 24,25, and 26. It is expected to draw some 175 representatives of Northern California federal offices.

At the conference, problems facing governement agencies in providing women and minority groups with employment opportunities will be the prime topic of discussion. Specially-appointed equal opportunity officers for the agencies, coordinators for the Federal Women's Program, personnel officers, and contracting officers will meet in groups to exchange information on current problems facing their respective agencies. The conference will conclude with a session on immediate and future plans to help meet federal obligations to assure fair play in government employment.

Speakers during the three-day conference include Ira Hall, Director of the Stanford Mid-Peninsula Urban Coalition; Dr. Carlton Goodlett, publisher of the Sun-Reporter, San Francisco; Dr. Mary Hayden, California State College at Fullerton; Monico Amador, Compliance Officer, Department of Housing and Urban Development, and Nat Brown, U.S. Civil Service Commission, San Francisco.

Coordinating the event for Ames are Dorothy M. Evans, of the Employee Management Relations Branch and John E. Leveen and Willie White, Jr. of the Employee Development Branch.

Moon Book

The book - "Moon" edited by David Thomas and some text by Dr. Von Braum is still available. The ARA bulk purchase price has been set at $31.75, on the basis of $45 retail. With 264 pages and 290 photographs, in 12" x 15" format, it is a beautifully illustrated history of the moon, including man's conquest.

This offer will close March 25. Purchase may be arranged through extention 2009.

DIRECTOR'S ANNUAL REPORT TO CENTER STAFF

Ed. Note:

The following is the annual report in its entirety as presented by Dr. Hans Mark, Ames Director, on Wednesday, March 17.

"At the beginning of my third year with you it is a privilege for me to be here and to talk with you about some of our problems and future prospects. You all know that last fall, for the second year in a row, statements were circulated in the public press that Ames might be closed. Although these again turned out to be false alarms, I must also tell you once more that I take the very existence of such rumors very seriously. They are part of the temper of the times and the message is quite clear: No federal research institution today can afford the luxury of taking its existence for granted. We must continue to demonstrate our value to society and we must do this by fulfilling real needs and by providing the answers to really important and fundamental questions. Furthermore, we must accomplish these ends with fewer people and with less money. I would be less than honest with you if I did not put this major problem before you as bluntly as possible.

MAGNIFICENT RESPONSE

"On the other hand, I would be remiss if I did not tell you that, because of your magnificent response to the challenges that face us, I have every reason to believe that 1972 and 1973 will be eventful years for the Center. As an example, let me mention five major programs that will form the focus of our activities in those years. First, in the field of short takeoff and landing aircraft we will be conducting flight experiments using the first experimental jet STOL transport to be constructed in the United States. The modified C-8 Buffalo aircraft will provide us with a unique opportunity not only to explore the flight envelope of this vehicle but also to work out the necessary operational procedures so that it can eventually be employed on a commercial basis. This program is an effort involving people from all of the Center's Directorates. I am also very pleased to say that we will be conducting the experimental flights in close collaboration with the Department of Transporations's Transportation Systems Center in Cambridge, Mass. Since the Department of Transportation will ultimately be responsible for determining the regulations governing the use of STOL aircraft and STOL transportation systems, it is extremely important that we begin to work with representatives of that department as soon as possible in our research efforts. Second, in the President's budget for FY 1972 six and one half million dollars have been allocated for a refurbishment of the 40 x 80 wind tunnel. This construction item is first in order of priority of the items submitted by the Office of Advanced Research and Technology because we have been able to demonstrate its usefulness in determining the low speed performance characteristics of important civil and military aircraft and because the importance of large-scale testing for vehicles having vertical or short takeoff and landing properties has been fully recognized. Although Congress has yet to approve the funds for this project it is my hope that these will be forthcoming and that the improved facility will help us to maintain our leadership in the field of large-scale testing. Third, we have acquired and will soon start the work to modify the Lockheed C-141 aircraft in order that it can carry the 36-inch reflecting telescope that is under construction at the present time. I have every reason to believe that this flying astronomical observatory will enable us to make the major contributions in the rapidly growing field of infrared astronomy. The operation of this aircraft by Ames as a national facility gives us a unique opportunity to take the lead in an important new field in the space sciences. We will be able to do this for a relatively small investment in terms of money and without being in an unfavorable competitive position with respect to other research institutions that may be more heavily endowed both with financial and manpower resources. Fourth, in early 1972 the Illiac IV computer will be installed at Ames. This computer is potentially the fastest computing machine in the world. The decision to place the Illiac IV at Ames rested primarily on our arguments that it would lead to important new developments in computational fluid physics. The presence of the machine at our Center will give us the opportunity to use our own technical problems in aeronautics and space sciences to drive the development of the software systems that must be devised for the machine. It has been my experience that important technical and scientific results invariably follow the development of new computational capability, and we will have a unique opportunity to benefit from this circumstance. Fifth, Pioneer F, the first spacecraft to go beyond the orbit of Mars, will be launched in February 1972. This launch will mark the beginning of mankind's attempt to explore the outer reaches of the solar system. In addition, the Pioneer spacecraft has unique engineering features, such as its nuclear power supplies, which may well make it the prototype for all the spacecraft used to explore the outer planets. We are now beginning to make further studies to determine the utility of Pioneer spacecraft for missions beyond those that will be conducted in 1972 and 1973.

DECLINING RESOURCES

"This is an impressive list. It is no exaggeration to say that each of these projects must, in its own way, meet with success, for the future of our Center may very well depend on them. How can we meet these new commitments when faced with declining resources in manpower and money? First, it is obvious, that we must stop some of the things we are currently doing. In the coming year a number of ongoing programs will be curtailed to make available resources that can be applied to our new commitments. Second, we will continue to take the necessary steps to reorganize certain important elements within the Center. As you know, we have recently conducted a reorganization of the Development Directorate to make it possible for us to conduct studies of new space missions. We have also made some organizational changes in the Aeronautics Division with the hope of making the results of our research work more readily applicable to practical problems. In the coming year I expect that we will readjust several other elements of the Center's organizational structure. I had hoped to be able to report to you the completion of our major organizational efforts at this time, but they are not yet finished. I strongly believe that great care and thought must be taken to achieve our organizational objectives and this has simply taken more time than we originally anticipated. Finally, we must continue to expand our collaborative efforts with other federal agencies and also with educational institutions in the neighborhood in order to strengthen our research programs and to make them more visible. I have already mentioned that our work in short takeoff and landing aircraft will be performed in close collaboration with the Department of Transportation. The operation of the Illiac IV computer will be a collaborative effort with the Department of Defense, several other federal agencies such as the Weather Bureau who will use time on the machine and a number of universities and private corporations. Along these lines I am pleased to report to you that we are about to conclude an agreement with the Department of Housing and Urban Development whereby they will finance some work at Ames directed toward introducing some of the technology developed at the Center toward the construction of better housing.

COMPLEMENT REDUCTION

"Let me now turn to what is probably our most serious problem. In the President's budget for NASA submitted to Congress in January, the request for FY 1972 is somewhat below the sum appropriated for the agency in FY 1971. In addition, NASA will have to reduce its civil service complement by 5 %. As a result of these actions, Ames will reduce the number of civil service positions by 98, from 1922 to 1824, by October 1, 1971. Discovering the means by which we can make the adjustment to lower personnel and financial ceilings and still carry on the vital work we are doing will occupy much of our time in the coming months.

"Ames is a relatively old Center in the NASA organizational structure. More than one third of the people on our civil service staff (672 out of 1922) are eligible for retirement. I know that the word retirement has many meanings and not all of them are pleasant. Nevertheless, it is very clear that individual retirement decisions will have a very major impact on the actions we will have to take with respect to involuntary separations. In order to make certain that the Center's staff is as well informed as possible about the financial conditions, the educational opportunities, the career options and some of the important problems encountered by individuals upon retirement, we will, in the coming weeks, conduct a number of informational programs. In addition, I intend to explore whether it might be possible for persons electing to retire to continue some work at the Center on a part-time basis when their special capabilities would contribute to the Center's future. I realize that one of the important difficulties faced by people trying to decide whether to retire is that a very abrupt change in life style is involved in going from full employment in a lifetime career to full retirement. It is important to try and

(CONTINUED ON PAGE 3)

Clarification of Personnel Procedure

The Records and Reports Branch (APX) has received several inquiries concerning the "Notification of Personnel Action," Standard Form 50. To clarify the procedure of an official personnel action, the following explanation is offered.

When an official personnel action is taken, such as; reassignment, promotion or demotion, the Records and Reports Branch issues a Standard Form 50, Notification of Personnel Action. This form is forwarded through the Organizational Director, Division Chief and Branch Chief to the employee. One form only, is distributed. It is marked "Employee Copy" and must be promptly given to the employee concerned.

Supervisors may post pertinent information on the Employee Record Card from the Standard Form 50. Each supervisor is encouraged to maintain an Employee Record Card for those under his supervision.

Employees affected by a personnel action should, upon receipt, review the form and call any errors to the attention of Mrs. Thomsen, ext. 2411. The employee is also advised to maintain a copy of the form in his personal files, since it is part of the official records affecting his employment.

DIRECTOR'S REPORT

(CONTINUED FROM PAGE 2)

minimize the adverse effects of such a change and I believe that continuing work on a part-time basis might offer a solution to this particular problem. In my view, there is an opportunity for imaginative thinking in this area. I would welcome all of your ideas on the subject and I would particularly urge each of you who may be contemplating retirement to explore these opportunities with our Personnel Officer. Finally, should involuntary separations from the Center become necessary we will again do everything in our power to secure employment for those people who are separated from the Center for programmatic reasons. I am pleased to report to you at this time that all persons separated from the Center last year who desired new positions found employment within three months.

OVERCOME DIFFICULTIES

"Let me conclude by expressing the hope that we can overcome the difficulties I have described and that we will continue to meet our responsibilities. This hope is not an idle one; it is buttressed by a faith I have in all of you that you will be able to surpass the achievements of previous years. In 1970 alone, for example, I can think of several things done here at Ames that attracted national attention. The simulation of the Concorde aircraft on the Flight Simulator for Advanced Aircraft has made it possible for the Federal Aviation Agency and its European counterparts to work out some of the regulations that will govern the operation of supersonic aircraft from all airports. The importance of this work has been clearly recognized by people at the highest levels of our government. The discovery of what are apparently abiogenically produced amino acids in the Murchison meteorite was clearly one of the major scientific discoveries of the past year and it was recognized as such not only in the scientific literature but also in the public press. I believe that the results obtained by the lunar surface magnetometer experiment will very likely be the most unexpected and important scientific results obtained from the Apollo program. In space technology, we have concluded a comprehensive series of aerodynamic and heating tests to help define the best configuration for NASA's Space Shuttle. Finally, two Ames staff members were singled out for special recognition. Edward Perkins received the NASA Exceptional Scientific Achievement Award for his leadership of our research in the area of supersonic propulsion. This work is likely to find important application in reducing supersonic transport engine noise. George Cooper received the Burroughs Test Pilot Award in recognition of his many contributions to safety and efficiency in the testing of experimental aircraft.

"I know that it is risky to single out programs and people since all of you have made your own contributions. However, all of us at Ames can take some measure of pride in these technical and scientific achievements. They constitute the most important proof that the Ames Research Center is a scientific institution of the first rank. I have every reason to believe, therefore, that we will grasp the opportunities that now appear before us and that we will surpass our present accomplishments in the future."

TECHNOLOGY IN ACTION . . . Participants in the west coast forum "Man-Society-Technology" held recently at Ames toured the Center and had a firsthand look at the relationships of the scientist, engineer and craftsman and their research tools. Charles A. Neaves (second from left), Chief of the Machine Branch, is pictured as he explains a wind tunnel model to (l to r) Dr. C. Dale Lemons, Chairman of the Department of Industrial Education, Murray State University; Dr. Edward Kabakjian, Executive Secretary, American Industrial Arts Association; and Dr. Ralph Bohn, Dean of Educational Services, San Jose State College.

Industrial Arts Forum Held

A west coast forum on "Man-Society-Technology" was recently conducted by the American Industrial Arts Association in cooperation with the Bureau of Educational Personnel Development and Ames Research Center.

Representatives from five western states and Hawaii met to examine the promises and problems of technology as related to man and his environment, with special emphasis on improving Industrial Arts education.

Dr. Ralph Bohn, Dean of Educational Services at San Jose State College, welcomed the attendees to the forum, and J. Lloyd Jones, Research Assistant to the Director, welcomed the group to Ames.

Tasks assigned to the workshops were to develop plans to implement in each state an educational partnership for the improvement of technological literacy, and to identify educational needs based on the challenge of technology.

The Center's contribution to the advancement of scientific knowledge in aeronautics, astronautics and life sciences was presented at the session on Technology in Action. Later, a tour of facilities following the evolution of a research idea (Trans Sonic Transport) was conducted. The tour illustrated the relationships of the scientist, engineer and craftsman and the research tools they use.

NASA Coordinator for the forum was Ames Educational Services Officer Garth A. Hull. Dr. Bohn was Regional Coordinator.

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Phone 2385

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Thursday between publication dates

Personal Finance Class

The Association of Continuing Education (A.C.E.) is offering an eight-week seminar in Personal Financial Development, MWF, 12-1, beginning April 5.

This seminar is purely educational in nature and is designed to get immediate money saving and/or money-making results for you. The tuition fee is $75 with the understanding that if you can not make or save the amount within one year of seminar completion, your tuition will be refunded. Topics covered will be: insurance; income, gifts and estate taxes; credit; home financing; and investments in savings accounts, annuities, securities, and real estate.

For further information, a representative of Personal Financial Development will be in Building 241, Room 147, on March 23 at 12 p.m.

Ames Airings

. . . by Jeanne Richardson

CONGRATULATIONS:

LARRY HOFMAN, Spacecraft Data Systems Branch, and his wife Joyce gave birth to a daughter, Linda Marie, recently. Ordinarily, as you know, it is the wife who gives birth. However, Larry helped so much, it is only fair to give him equal credit.

It seems that Linda Marie made up her mind to join the world and could see no reason to wait for a hospital or doctor. Typical of a little girl, she thought her daddy could handle things just fine. So, Linda was born at home, March 4 at 5:30 a.m. and weighed 7 lbs. 3 oz. Larry said everything happened so fast that he didn't have time to be nervous.

GARY GOODMAN, Astrophysics Branch, was accepted by VISTA, not long ago. VISTA, by the way, means Volunteers In Service To America. Gary, who has a Phd. in Astronomy, has been doing research at Ames for two years as a National Research Council Associate. He hopes to work with Indians while in VISTA, on a researvation or elsewhere. If not Indians, he is hoping to be placed in a rural community to work with migrants.

JAN KONRATH, Data Management Analysis, and JEANNE CLEMSON, Communications Branch, hosted a potluck dinner party the other night, for old and new ARA board members. According to reports from the guests, the girls did a fantastic job and it was a very nice party.

KEITH OGLES, son of PHYLLIS and BILL OGLES, both of the Photographic Technology Branch, was honored last week by the Santa Clara Valley Sportswriters and Broadcasters Association. Keith, who swims for West Valley College, has the fourth quickest 200 freestyle time (1:50.9) among junior college swimmers in the state. Impressive, no? His selection as Junior College Athlete of the Week was based on his three victories in a meet against Marin, March 5.

Band Benefit March 23

Noted illusionist Lee Grabel will perform at the Sunnyvale High School Gymnasium on Tuesday, March 23, 7:30 p.m. Proceeds from the show will go toward the Sunnyvale High School Band uniform fund.

Tickets for the affair are $2 for adults and $1 for children. They may be purchased from band members or at the door.

AIAA Meeting

The San Francisco Section of the AIAA will hold a dinner meeting Thursday, March 25 in the International Building of the Stanford Research Institute, 333 Ravenswood Avenue, Menlo Park. A no-host social hour will begin at 6 p.m. with dinner at 7 p.m., and demonstration of a LIDAR unit and lecture by R.T.H. Collis will follow at 8 p.m.

For reservations call Bernard Wood at 326-6200, ext. 2304. Cost for the evening is $5 per person.

Theatre Offer

The next reduced rate offer to Ames employees by Century Theatres, San Jose, will be "Little Big Man" starring Dustin Hoffman and Faye Dunaway for the Sunday show, April 25 at 8 p.m. The mail order coupon will be printed in the April 15 issue of "The Astrogram."

GOLF

.....by Kay Bruck

The Point-Par tournament at Spring Hills Golf Club in Watsonville was a partnership affair. Partners taking prizes, as purported by Chairmen Tom Polek and Chuck Turnbill, were;

First Flight - Bob Carlson and bogus partner (blind score because of odd number of players) First place; Ruben Rambs and George Falkenthal, second place; and Owen Koontz and Herb Ginoza, third place.

Second Flight - Ken Souza and Gene Garis, first place; and a 3-way tie for second place went to Jerry Dickson and Tom Polek; Tom Itow and bogus partner (blind score again) and Norm Barsi and Ray Einberger.

Fred Carpenter got nearest to the pin on the 9th hole. The next monthly tournament is scheduled for Santa Teresa on April 3.

JOGGERNEWS

. . . by Jim Woodruff

Five Joggernauts ran the West Valley Marathon, which was this year's Western Regional Marathon, on March 7. The race started and finished at Burlingame High School, and included two laps around Foster City. The weather was perfect, and the race well managed.

The Joggernauts, their times and finishing places are: Bruce Castle, 3:31:21, 99; Paul Sebesta, 3:34:23, 125; and Jerry Barack, 4:01:19, 135. This was the first try at the full 26 mile 385 yard marathon distance for Jim, Jerry, and John.

New Members ARA Executive Board

The ARA Board of Directors met recently, in accordance with the guidelines set forth in the Constitution, to elect new officers.

Elected to the Presidency for 1971 is former Secretary, Janet Konrath of Data Management Analysis; Emerson N. Shaw, Vice-President, Jessie Gaspar, Secretary, and Roger C. Hedlund, Treasurer.

Janet, a veteran Ames Computer Employee and bowler, says she is going to run the Board "By the Numbers" and expects to see an active year ahead. Several new activities, now in the formative stages, will be announced shortly. Organized clubs will continue to benefit from ARA funding and assistance wherever possible.

Technicians Meet

The South Bay Section of the California Chapter of the American Society of Certified Engineering Technicians will meet March 25 at 7:30 p.m. in the former chambers of the San Jose supervisor, 20 W. Hedding Street.

All Certified Engineering Technicians and those interested in becoming certified are invited to attend.

The first order of business will be election of officers. For further information contact Don Gotimer, 966-5002 or 263-4867.

VACANCY NOTICE

Merit Promotion

Technical Assistant, AST Technical Management, GS-1301.1 -11/12. Planetology Branch. Closing date, April 2, 1971.

How to Apply: Interested persons should telephone the Employment Branch, extension 2021 or send memorandum to Mail Stop 241-6 by the closing date.

WANT ADS

The Astrogram's ad section is provided as a personal, non-commercial service to Ames employees. Advertiser must be identified by name, extension and organization. The name may be left out of the ad but is needed for records. Ads must be submitted in writing to The Astrogram, N-241-4, by Thursday, a week before publication. The advertiser's home telephone number must be provided as a point of contact except in carpool notices.

AUTOMOBILES

For Sale-1966 BSA Hornet, set up for street, excellent condition, extras, $649, call 245-1811 before 3 p.m.

For Sale-VW BUG, 1969. Like new, 13,000 miles, original warranty, air-conditioned, radio, heater, bumper guards, defogging rear window, stick shift, snow chains, $1775 or best offer (compare used car lots). 843-3191 after 7 p.m. or any time weekends.

For Sale-1960 VW conv., new top, paint, shocks, brakes and radials. Rebuilt engine '63 trans., new clutch. Blaupunkt radio, other extras, good transportation for only $575. 948-4678.

For Sale-1961 Dodge 1/2 ton pickup, 6 cyl. engine, 3-speed transmission, short wide bed, 1969 Vacationeer Custom Sport Top, $895. Call Don Smith 253-4316.

HOUSING

For Rent-Ski Cabin, West Tahoe, Chamberlands, sleeps 9, 3-bedrooms, 2-baths. Fireplace, wood furnished, washer and dryer. Carpets wall to wall. Weekend rates $75, call 258-1882.

For Sale-Home in Santa Clara, 15 min. from Ames, 3-bedrooms, 2-baths, kitchen-dining combo., 2000 sq. ft., 30 k. Call 241-7909.

For Rent-Winterized cottage near Rte. 89 and N. Tahoe ski areas. Sleeps 6-$90/wk or $40/wknd - 328-4642.

For Rent or Lease-Santa Clara, neat 3-bedroom, 2-bath, unfurnished home, 12 minutes to Ames carpets, drapes, washer, stove, fireplace, patio, 2-car garage. Walking distance to shopping centers and all schools, children ok. $235 mo. - refrig/freezer included. First and last months rent, plus $100 cleaning deposit. Call 738-3477.

MISCELLANEOUS

Part Time Typist Needed - to type book manuscript. Typist will have to provide own typewriter. Approx. 4 to 8 hours per week work, estimated. Call 321-8396 after 5 p.m.

Found-Man's ring, give description, ext. 2337.

Found-Looseleaf binder, describe contents, ext. 2337.

For Sale-Electric stove, 3 yr. old Westinghouse, excellent condition, $70, call 323-4520, evenings.

For Sale-Brought back too much from Europe, carved nightstand $65, coffee mill $10, other items, 493-1638.

For Sale-Tire chains, will fit sizes 560 x 13, 590 x 13, 600 x 13, 520 x 14, 500 x 15, like new, $5.50; also a Datsun PL 510 Service Manual $6.50, call Hank at 243-8963.

For Sale-Boat Kit 14ft, half complete with instruction manual, $80 worth of parts for $40, 257-2738.

For Sale-Sears Kenmore washing machine, 3 cycles. Runs well, 8 yrs. old, $25, call 241-7909.

For Sale-Ladies 3-speed English bicycle, 26", 2 hand brakes, foot brake, speedometer, $25.
Horse Boarded, $45 mo., call F. Thompson at 379-2385.

For Sale-Spanish Chandelier, $100, pair of orange suede bell pants - size 10, $50 or best offer. Call Mary, 968-4030, evenings and wknds.

WANTED-Exciting, interesting, and vivacious people who like to travel and enjoy the company of the same. The small sum of $26.50 will get you all of this and much, much more. For inofrmation, call Barbara Allen, ext. 3230, or Helen Arhart, ext. 3175.

For Sale-Condominium 4-bdrm., 2 1/2 bath, Eichler townhouse, pool, play areas. Best Santa Clara loc., cul de sac, adjacent to elem. school, park. $29,500. Will consider trade on larger house, or short term lease back from investor. Call 248-4690

For Sale-A Westgate beauty located in top rated Cupertino school areas. Home has 3-bedroom, 1-bath, wall/wall carpets-Kodel shear tipped, insulated, nice backyard with fruit trees, 2-car garage, on a corner lot; price $24,950, call 252-9406.

For Sale-Zoom telescope, swift telemaster, 15-60 pwr w/polished maple gun stock shoulder mount, w/sling, all in sim-leather case, $90. F. Styles, 257-3360.